

The Archer

Firstly, everyone wants to shoot some arrows, but once they've done that, they start thinking that it'd be nice if they had more control over where the arrow goes. These are the basics and some tips I've picked up along the way, and anyone who decides this is all they need to know is mistaken.

Beginners

[Stance](#) | [Body Position](#) | [Bow Arm](#) | [Bow Hand](#) | [String Arm](#) | [String Hand](#)
[Anchor Points](#) | [Sighting](#) | [Releasing](#) | [After the Shot](#)

Right, this is where it gets simple, no more than the minimum to get the arrow down to the other end and have it sticking into something you were pointing at.

Stance

Stand up when you shoot, it shouldn't look like you're trying to crawl through a hoop 3 foot off the floor. If in doubt, address the target (stand as if you were about to shoot) and depending on what works better for you keeping both eyes open, or shutting your non-dominant eye (the one you hold the bow with) draw the bow back, looking all the time at the target and not at the bow at all, you should find the string has come to you and not the other way round. Whatever your stance, it ought to be the same for every shot, which means address the target and don't move your feet until you've shot all your arrows. When you shoot again, put them in the same place. If it's uncomfortable, change it until you get a stance you're happy with.

Body Position

This should be comfortable and vertical. You shouldn't need to lean back or forward, left or right, or twist in any direction when shooting, the less tension you have in your body during shooting the better.

Bow Arm

This is the arm which holds the bow out in front of you. Don't let the shoulder ride up in front of you, and don't lock the arm out, these will cause the string to hit your arm, it hurts. The bow arm should be SLIGHTLY bent, this stops you shaking the bow to peices, stops the string hitting your arm and keeps the shoulder relaxed and low. Gary will probably tell you to "turn it over" at some point.

Bow Hand

The hand that holds the bow. The handle of the bow should sit in the middle of your hand, the centre of the bow being halfway between the thumb and first finger and the handle pulling into the palm of the hand. Don't hold the bow with your thumb, it's not strong enough, pull into the palm and thus down the arm, which is much stronger and more stable. Keep the bow hand relaxed, this stops you gripping the bow, which twists it, therefore causing the arrow to go where it wasn't pointed and also stops you shaking the bow as much. A relaxed bow hand will cause the bow to 'sit' in your hand easily, the handles are actually designed around the archer. Drawing pins on the handle provide an immediate remedy for grippers and snatchers. (Please don't do that to me!)

String Arm

The arm which pulls the string back. When drawing, get your elbow to go past your face, this allows you to use your shoulder and back muscles to draw, which are far stronger than your biceps. When fully drawn, the elbow should ideally point backwards and be level with the arrow. If it's not, don't worry, as long as you're holding the arrow with your back, but not your arm, then it's OK. However, if the elbow does get really high, then it might be worthwhile bringing it back down a bit, it'll be affecting where the arrow goes more than it ought to.

String Hand

The hand which holds the string. You will be told to have one finger above the arrow, two below it. Hold the string with the first joint of your main 3 fingers so the hand is curled towards your face. Get the thumb and little finger out of the way. You should be wearing a finger-tab to draw the bow, if not, you'll find it harder to draw and release.

Anchor Points

Where you hold the string. When fully drawn, if you're holding the string in the same place, that's good, it's also almost unavoidable. WHERE you hold the string is more important. Make sure that the string touches things that you know will be in the same place every shot, the most useful ones are on your face. Sounds fun doesn't it? But if the string touches the front of your face and then goes away from it, then it can't hurt you can it? Use your String hand to good effect, put it tight against the bottom of your chin, so you can't move it up or down. Next, put the string on the end of your nose, or one side of it, now you can't go left or right, and the fact that your head isn't moving shot to shot (make sure!) means you are now locked in place in 3 dimensions. Are there any more? No. Definitely not. Don't listen to those crazy quantum lecturers! As you progress in the sport, you may want to alter this to suit you; you can.

Sighting

What we're all interested in, seeing the target. Your bow ought (and if it doesn't, then you're shooting barebow) to have a sight, don't worry where it is right now. Once you've drawn and anchored, you'll probably close your left eye if you're right handed, and vice versa for lefties. I'm wierd, and don't close any eyes, so just do what feels natural, making sure the same eye is looking though the sight each time. Centre the sight on the middle of the target, either with pin, cross-hair or just putting a circle on a circle. If you can't hold it steady, don't worry, centre it as best you can. When you've lined everything up and you're ready, we move on to...

Releasing

The money shot. This is where it can all go wrong, a bad release can mean everything we've worked up to so far is meaningless. Once you're lined up, fully drawn and ready, you can release. You **MUST BE READY!** If something's not right, then either put the bow down and start again, a good habit to get into, or see if you can fix it. Once you're ready, release, just like that. Let go, don't hold on anymore. It is a release, one shouldn't flick the fingers open, this puts sideways force on the string and sends the arrow in a funny direction. Don't do it. Don't let the string arm collapse on release, because when you let go, the tension in your shoulder and back should cause the string arm to fall backwards, not forwards. If it falls forwards, it's because you're anticipating the release and relaxing too early, this wastes the effort you've put in to get the string back that far and is always inconsistent. Don't do that either!

After the Shot

The arrow's on its way, where's it going? You want to find out, so you throw the bow arm to one side or drop it out of the way too soon and look for the arrow. Again, you've anticipated the shot and your reaction has caused the arrow to be adversely affected. If you hear a satisfiying "thump" then that's enough, the bow arm should not have moved from its set position, and you'll find out where the arrows went soon enough when you go and collect them. If the arrows are in a group, then that's good, if it's nowhere near the centre of the target, it really doesn't matter in the least, sights are there to be moved so that you don't have to.

Advanced (The Mental Game)

This is a collection of useful tips and tricks that might or might not help you squeeze those last few points out of the round. If you are shooting really badly, check with everything in the beginner's section, are you doing everything right?

Gold-Shyness

The blight of many archery careers, and many, many attempted solutions. The problem can be described as thus: You start lining up the shot and before you know it the arrows gone, when you

were trying to get settled ready for a good shot. It's happened to you again and again, it's seriously frustrating, but what can you do?

1. Only let go when it's pointing where you want it to. Simple and guaranteed to work if you can do it.
2. When you're lined up, make up something you have to do before you release, like count to 5 or tap your foot, something in between lining up the shot and letting it go.
3. Get a clicker. Some would say a fate worse than death, but it makes sure you can't let go until it clicks, allowing you plenty of time to aim.
4. Sometimes it doesn't help that you have a pin that you're trying to line up exactly and it just won't. Try switching to a half cross-hair or just a circle. The human mind is very good at concentric circles, you'll be surprised at how accurate you can be if you only line up the circles with each other.
5. Buy a compound bow. The dark side use release aids, and thus you don't even have to THINK about releasing until you're ready to.

If only in mild trouble, then there are some things you can do that may help you be able to aim again:

1. Shooting at a blank boss. There is now no incentive to release until you're ready to. Remember the feeling and recreate it in front of the target.
2. Practice aiming without an arrow. You wouldn't release a bow with no arrow, so draw up unloaded and hold on target for 10 seconds, then let down. Then for 15 seconds, then down again. Repeat until you feel like you can do it with an arrow there. Make sure you don't actually release though!

Shooting Well

Sounds so simple, but is it? Well, if you're desperate to hit the ten, you won't. "I HAVE to hit it, I HAVE to" attitude is unstable. Concentrate, by all means, this you must, but don't get manic, get focussed. Archery is much like a martial art, a lot of thought needs to go into it if you are to be successful, meditation almost. Routine is the key, a settled, stable (mentally and physically) process of firing arrows will give the best results. If you bash them all off really quickly, then how did you concentrate on the second one, never mind the last? Thus how can you expect to be accurate? Feel the shot. Sounds both arty-farty and abstract, but it's reasonably straight forward. Comes in 2 types, mental and physical.

- **Mental.** Are you ready, in all aspects, to fire this arrow? If you've been doing physical exercise before-hand, there will be some adrenaline in you, which may cause you to shake and feel "wired" for a little while as you try and stand still and concentrate. Concentration is the key, set up your mind right for each shot and the body will almost certainly fall into line. Strong aiming comes from good mental preparation for the shot, as does a good technique. If you can, try to 'feel' each part of you internally during the shot, are they all comfortable and as relaxed as possible? Is it the same as the technique you've settled into? This can all be part of your routine to go through for each shot.

- Physical. Also mental, really, but it's to do with the body being set up right. Are you ready to fire? Are you tired, wired or otherwise distracted? Make sure everything about yourself is ready to fire the arrow, is your stance, draw, anchor, sighting etc... the same? If it's not, then should you bring it back to how it was or adopt the new way? Are you creeping forward during sighting? A clicker stops that, but some people don't get on with them. Make sure you're releasing smoothly, it might help moving along to the tips of your fingers as the string will slip off them that much easier. Is your String arm going backwards on release? If not, see beginners section about it, but it may help to actively pull your arm backwards on release. You could be having trouble with 'snatching' the bow arm on release, a way round that could be to close your eyes on release, that way you can't see where the arrow goes so there's no incentive to try and peek.

The main point of note technically with shooting is that if there's a problem, try and identify it. Once you have, concentrate on it to get it right to the detriment of others, so that when you concentrate on the shot instead of the technique, it should all happen automatically for you. The body will carry out the most complex tasks demanded of it once they have been practiced enough times. All you need do is practice each part of firing until the body remembers them all correctly, which it will.

Aids to Shooting

These are a few tips on shooting that might be of benefit.

Strength. Do you ever just resort to watching the sight quiver and wobble all over the target? The answer is simple, don't let it. To stop it you need to be in total control of the bow, which means you need to practice controlling it. Draw the bow and hold it for 30 seconds, then put it down for 2 minutes, then again for 30 seconds, repeat twice more. You will probably be very tired from it. However, if you do this regularly, then you will find your scores improving, as shooting will no longer be such a physical effort, and you can relax more of your body and thus shoot more smoothly. I baulk at saying "top archers" because 99.9% of us aren't, but people like that can hold the bow for over half an hour. Shooting is NO effort for them and is one reason among many why they're the top archers and we're not.

Mental Imaging. Works in 2 ways.

1. Even at rest, think yourself hitting the middle, everything about it, get used to doing it, then hopefully you will.
2. Sounds silly, but something you want to hit in the middle more than the gold, you could be surprised at what you come up with and how effective it can be.

Telling you to visual yourself shooting perfectly and hitting the gold is Garys second favourite thing, after adjusting bracing heights, so get used to doing it! Seriously, it really does help.

The Bow

Often overlooked in some books, choosing the right bow is essential for a lifelong enjoyment of archery. A good archery shop will offer better advice than I could in this document, however as a general guide, these are some of the things you need to consider.

How strong should the bow be?

Try out a few different strength bows and find one that you feel comfortable with. You will probably have an idea if you've been using a club bow for a while, and the more experienced members ought to be able to offer advice on this. A bow which is too strong will mean you may end up pulling a muscle and fighting every shot off, which is bad, by the way. A too weak bow may mean that shots will be less accurate (due to longer flight time) and you will probably get bored of it after a while.

What arrows do I need?

You need specific arrows for different strength and size bows, the shop should have a chart to work this out. If you are a novice then do not get carbons. Although better than aluminium, they break more easily and a few bad shots can mean you may end up paying a lot of money. It is better to stick with aluminiums for a year or two until you are confident enough that you will not miss the target. Carbons also exaggerate bad looses and most aluminiums will reach the longer distances anyway.

What bow should I get?

There is nothing wrong with having a wooden bow, however if you can afford it then I recommend progressing from wood, as wooden bows are not as consistent or efficient as other types. However ALWAYS TRY OUT the bow before you buy. In fact try out different bows you like and do not be afraid to spend hours on one bow. It may take several days before you find out a bow/weight combination you like. If you can, take someone who knows about archery along with you as they will be able to spot things you cannot.

Basic Setup

Setting up your bow needs to be done correctly and the combination and variety of different equipment you could have makes it very difficult to try and explain each one here on this page. However, to start you off, the string should go down the middle of the bow when strung, if it doesn't, it's likely that one or both of the limbs is bent, so you should go back to the shop and do something about it. One of the most important things to find out how to do correctly is how to string your bow. If done incorrectly you may end up damaging your bow and yourself. The best thing to do is to go to the club and ask someone how it should be done.

Advanced Tuning

If you think you're shooting fine, but the arrows are just refusing to cooperate, it could be that your bow isn't tuned up properly. Take a look at the [bow tuning](#) page for more info.

Bow Tuning

When you have shot for a while and are (hopefully) shooting quite well, then you ought to think about the more advanced set up of your bow and tuning it in properly. Although gadgets are no remedy for bad shooting, having a well tuned bow will make shooting it feel nicer and add some points to your score, especially outside.

Centre-Shot

This is a measure of where the arrow points in the first place. Nock the arrow and hold the bow out in front of you, looking down the arrow. Line up the string with the centre of the bow and see where the arrow is in relation to the string. For right-handed archers, the point of the arrow should be seen to the left of the string. This is the most widely recognised compensation for using a finger-release. Of course, this works the other way round for a lefty.

Bracing Height

The distance from the nocking point to the arrow rest. When you bought the bow, you were probably told amongst the mountain of new information, the right bracing height. If you can't remember what it was, a basic guide for a 68" bow is somewhere around 8½ to 9½ inches. If you can, hunt down the manufacturer (with your internet/phone, not your bow!) and see what they recommend for the model you have. Other people in the club may also be able to help you. There are usually about 2 or 3 bracing heights that suit the bow well inside the range specified for it, like resonant frequencies, but in these cases they damp the bow better than any other lengths. It is best experimenting, and when you get confident you might find it works better outside these limits. One point of note is this, a longer bracing height will give a shorter power stroke for the same distance pulled back because it reaches this length faster than a short one. Also, a longer bracing height means that more energy has been wasted holding the limbs bent permanently, when it could be imparted onto your arrow. Therefore a lower bracing height would seem the way, but too far and the limbs will probably not be synchronised properly, making the shot 'unclean'. You can measure your bracing height using a bracing-height gauge, and lengthen it by adding twists into the string.

Limb Tiller

Because modern target archery uses three fingers, one above, two below, it means that the bottom limb is usually put under more stress than the top one. Most manufacturers allow for this with a little positive tiller built into their bows to compensate for this. What's positive tiller? Well, quite simply, the top limb needs to be under the same force as the bottom one at release, otherwise they will not both snap forward at the same speed and at the same time, resulting in a messy shot. If you are able to adjust your limbs or are worried about the tiller you currently have, then the basic rule of thumb is that the distance from the base (the bit at the riser) of the top limb to the string should be a little more than the distance from the base of the bottom limb to the string, about $\frac{1}{2}$ a cm. Again, it is worth experimenting with what feels right and produces a smooth shot.

Stabilisation and Damping

Modern target bows benefit from stabilisation and damping. Firstly, the long-rod. Like most things in archery, you need one that suits your bow, this is important, try it out first at a shop, try lots out, try lots of combinations of V-bars, doinkers, the lot, so you know what feels right for you. The main point of note is that a long-rod's primary purpose is to put some weight outside the bow to help in the balance of it, not, as many think, as stabilisation, although it does that too. Most people start with a long-rod, but this often causes the bow to fall forward alarmingly, so one can also put on some V-bars to bring some weight back towards the archer. This is often used by a lot of people as it provides a good firm bow in the hand that's well balanced. Again, make sure you try before you buy, and if they're adjustable, then play about with what they do, but most importantly, **ONLY CHANGE ONE VARIABLE AT A TIME AND NOTE WHAT YOU DID!!!**, otherwise you won't be able to recreate that 'magic' shot when everything felt right with the bow.

More recently, people have started putting rubber onto their bows, these take 2 main forms, the limb-saver and the doinker:

Limb Savers

Pieces of rubber, mushroom-like in appearance, which one sticks to one's limbs. Opinion is divided about these, some say they're awful and slow the bow down, some people love them. One thing is without doubt, they **DO** absorb a lot of vibration from the bow. The other point of slowing the limbs down is, in my opinion, rubbish. I use limb-savers and when I went to Quicks in Waterlooville, they stuck them on and to prove this point had me fire through a metal ring which measures the speed of the arrow before and after they were applied. The results were identical. This is down to where on the limb they are placed. Naturally, the further along the limb they go, the more vibration they will absorb, but too far and they **WILL** slow the limb down. The secret is to have them at the fade-out of the limb, the part where it only starts bending. This is best described as the point where the wood/carbon/whatever which attaches to the riser comes down to a long V-shape (when looking at the narrow edge of the limb). Where this 'V' meets is the fade-out as the limb starts bending there. This is where the limb-saver should go, ideally.

Doinkers

Pieces of rubber that attach to the bow or stabilisation equipment to damp the shot. There's probably little scientific reasoning behind these (I can't be bothered to think about it), other than they seem to work. If added to the end of a long-rod, then the vibration taken along the rod is absorbed by the doinker and not reflected back down the rod for you to feel as you loose the arrow. Also, they can be fitted direct to the bow with weights on them to fine-tune the feel of the bow and to absorb vibration from the bow. Many people have found that these do help getting smooth shots out and their adoption has been more widespread than limb-savers. Golden-rule time, try one, you might not need it, it might make all the difference, but don't get something because it looks nice, get it because it does the job you want it to.

Nocking Point

Very Basic

Hang on a minute. Do you have a nocking point on your string? If there isn't one then you need to fix one (a bit of sticky tape works well as a temporary device) to your string. Find the spot on the string which is parallel to the arrow rest and move up by half a centimeter and fix the point there. This will not be accurate but will serve as a temporary point.

Advanced

To get the most from your bow you need to set it up correctly to enable a smoother and more accurate flight of the arrow. One part of this setting up is aligning your nocking point and should only be done when you can group your shots. Take several straight arrows and remove the fletchings from one. Shoot all the arrows into the target noting where the unfletched arrow lies compared to the others. Do this several times until you are sure that the unfletched arrow always goes in the same place away from the others. If the unfletched arrow goes higher than the others then lower your nocking point, but if it goes lower then raise it (you only need to raise and lower by a few millimeters usually). Change the nocking point and repeat the process until they all hit the same spot (with perhaps the unfletched one slightly lower and to the left of the fletched ones). The idea behind this is that if the fletched arrows leave the bow at an angle then the air resistance against the fletchings will pull the arrow until it is flying straight. However the unfletched arrow will not be subject to this air resistance so will continue at the angle. If the nocking point is low, then the unfletched arrow will fly upwards, higher than the others. A new and different set of arrows means you have to adjust the nocking point.

Button

The Button should first of all be inserted into the bow so that the arrow is aligned as described in centre-shot, above, and so that it is in contact with the middle of the arrow when the arrow is nocked and on the rest. When you become proficient enough to use a button, this too needs to be tuned before it works to its full capacity. Again shoot several fletched and one unfletched arrows several times noting where the unfletched arrow lies. If it is to the left of the fletched (for for a

right-handed bow) then the button spring needs to be softened and if it is to the right then the button spring needs to be stiffened. Even though you have aligned the arrows to centre-shot, you still need to play about with the spring and this is done outdoors with the walkback test.

The Walkback Test

Do this test after you have set up the nocking point.

When you are outside set up a boss at about 40m and pin a small piece of paper near the top of the boss to aim at. Set your sight mark for about 20 metres. Stand about 5 metres away from the boss (10 if you are using carbon arrows) and shoot about 3 arrows into the target. Mark down where they group. Now stand 10 metres back from the target (15 for carbon) and shoot another 3, noting where the group lands. Repeat this process of stepping back an extra 5 metres and shooting three arrows until the arrows land at the bottom of the boss. (Note you shoot three arrows to eliminate bad looses). At the end you should have about 6 different groups starting from the top of the boss going to the bottom. If they are in a straight line then your button is tuned properly. If they slant to the right at the bottom like this \ then you need to increase your spring tension. If they slant to the left / then you need to decrease the tension. If there is a C shape then you need to move the whole button into the bow. If the C shape is facing the other way like this), move the button out of the bow.

It is worth noting that if you have two sets of arrows, eg carbon and aluminium, then it is an idea to have a separate buttons for each set if you can afford it. That way you know that both are always tuned properly to the bow.

Shooting in the Rain

Here are some tips from a top-of-the-range coach - no, not Gary but Gary's boss, Peter! Who works for G.N.A.S.

Just a few pointers of how to look after your bow and prepare yourself when shooting in wet-weather conditions.

This is a summary of observations from a Junior shoot:

The weather was cool and it rained a mixture of drizzle through to very heavy rain.

Most of the juniors were very ill prepared for the weather conditions.

1. No appropriate cold/wet weather clothing.
2. No umbrellas to walk to target to keep archer and score boards dry.
3. Bows were not kept dry.
4. Tabs and release aids were not adequately protected.
5. Baggy clothing was pulled on but not checked for string clearance.
6. Archers did not warm up adequately at the start of each distance.
7. Bows were not cleared of excess water before the first shot of each end.

Best Practice:

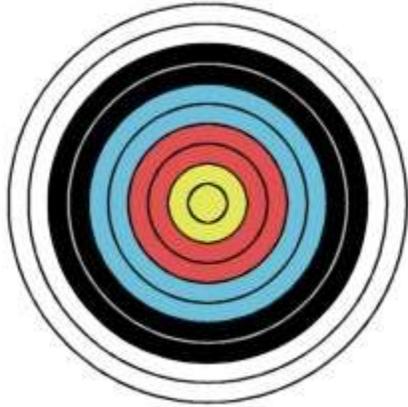
1. In cool and wet weather it is important to stay dry and warm so that your muscles can work efficiently and energy is not wasted. Clothing should be light, comfortable and wet proof. Many light layers work better than one heavy layer. Attention should be paid to good waterproof footwear.
2. A strong umbrella is a must in the rain as a good deal of time is spent walking to, and at, the target. Your great shooting will be wasted if at the end of the tournament you do not have a valid, legible score sheet
3. Bows should be protected from the rain as much as possible. Either kept in your tent or covered when not in use.
4. Tabs and release aids must be kept dry either in your pocket or quiver, not hanging from your bow.
5. Only ever pull on extra clothing that you have tried in practice sessions with someone to watch that you have perfect string clearance. You must be able to move freely and see clearly.
6. To enable your body to work efficiently it must be warm. Cooling down between distances can be averted by doing regular warm up exercises.
7. If too much water is sitting on the limbs and string a less than efficient shot will be done. If the bow cannot be kept in a tent or shelter, the string should be pinged to remove excess water. (Recurves only.) Compound bows should be wiped down thoroughly.

All kit must be dried and aired thoroughly at the end of each day's competition.
Best performances are not achieved through luck but by good preparation.

Indoor Rounds

Standard Face

Rounds shot on a standard target face, using 10 zone scoring (i.e. inner gold is 10 points, outer white is 1 point).



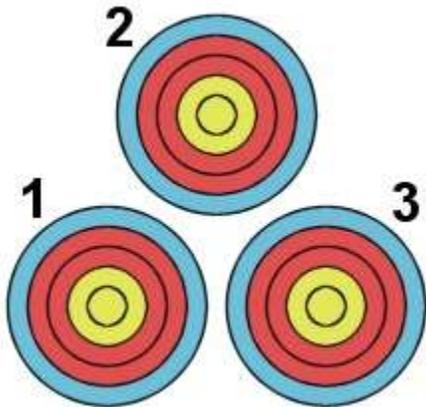
Round	Dozens @				Arrows per End	Max Score
	18m, 40cm Face	25m, 60cm Face	30m, 80cm Face	20yds, 60cm Face		
Bray I	2.5	-	-	-	3	300
Bray II	-	2.5	-	-	3	300
Combined FITA	5	5	-	-	3	1200
FITA 18	5	-	-	-	3	600
FITA 25	-	5	-	-	3	600
Portsmouth	-	-	-	5	3	600
Double Portsmouth	-	-	-	10	3	1200
Stafford	-	-	6	-	3	720

Special Faces



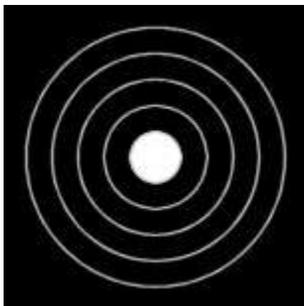
FITA 3-spot vertical face

This face consists of a vertical arrangement of 3 targets containing the inner 5 rings of a standard face. It can be used for FITA 18 or FITA 25 rounds to prevent arrow damage, as only 1 person shoots at each individual target. Scoring is the same as for a standard face, but only scores of 6 or above are counted.



Vegas face

As for the FITA 3-spot vertical face, contains the inner 5 rings of a standard face, but in a triangular rather than vertical arrangement. A single arrow is shot at each target per end. Scoring is the same as for a standard face, but only scores of 6 or above are counted.



Worcester face

16 inch face on a black background, using 5 zone scoring (i.e. inner "gold" is 5 points, outer ring is 1 point).

Round	Dozens @ 18m, Vegas Face	20yds, Worcester Face	Arrows per End	Max Score
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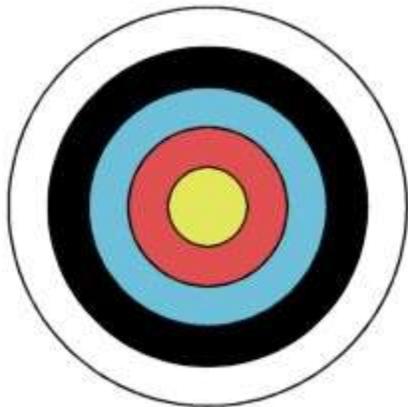
Vegas	5	-	3	600
Worcester*	-	5	5	300
Double Worcester*	-	10	5	600

* Note that in a Worcester round two faces are placed vertically on the boss, with each archer shooting initially at either the top or bottom, and then switching every 6 ends (2.5 dozen arrows).

Outdoor Rounds

Imperial Rounds

Imperial outdoor rounds are all shot on a 122cm standard target face using 5 zone scoring, where the gold is worth 9 points, the red is 7 points, blue 5, black 3, and the white gets you just the 1. In reality, the faces usually have 10 rings to allow them to be used for Metric rounds as well, but Imperial scoring is based only on the colour hit. During all Imperial rounds 3 arrows are shot per end, but you usually shoot 6 arrows before going to collect them to save time. The furthest distance is shot at first, working down to the closest, which is good because it tricks you into thinking you're improving!



Round	Dozens @								Max Score
	100yd	80yd	60yd	50yd	40yd	30yd	20yd	10yd	
Albion*	-	3	3	3	-	-	-	-	972
American	-	-	2.5	2.5	2.5	-	-	-	810
Bristol I	-	6	4	2	-	-	-	-	1296
Bristol II	-	-	6	4	2	-	-	-	1296
Bristol III	-	-	-	6	4	2	-	-	1296
Bristol IV	-	-	-	-	6	4	2	-	1296
Bristol V	-	-	-	-	-	6	4	2	1296
Columbia**	-	-	-	2	2	2	-	-	648
Hereford	-	6	4	2	-	-	-	-	1296
New National	4	2	-	-	-	-	-	-	648
Long National	-	4	2	-	-	-	-	-	648

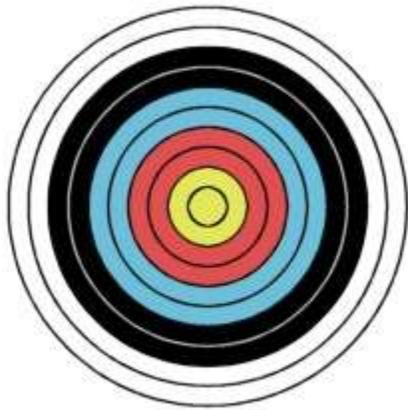
National	-	-	4	2	-	-	-	-	648
Short National	-	-	-	4	2	-	-	-	648
Junior National	-	-	-	-	4	2	-	-	648
Short Junior National	-	-	-	-	-	4	2	-	648
Somerset**	-	-	6	4	-	-	-	-	648
St. George	3	3	3	-	-	-	-	-	972
St. Nicholas	-	-	-	-	4	3	-	-	756
New Warwick	2	2	-	-	-	-	-	-	432
Long Warwick	-	2	2	-	-	-	-	-	432
Warwick	-	-	2	2	-	-	-	-	432
Short Warwick	-	-	-	2	2	-	-	-	432
Junior Warwick	-	-	-	-	2	2	-	-	432
Short Junior Warwick	-	-	-	-	-	2	2	-	432
New Western	4	4	-	-	-	-	-	-	864
Long Western	-	4	4	-	-	-	-	-	864
Western	-	-	4	4	-	-	-	-	864
Short Western	-	-	-	4	4	-	-	-	864
Junior Western	-	-	-	-	4	4	-	-	864
Short Junior Western	-	-	-	-	-	4	4	-	864
Windsor*	-	-	3	3	3	-	-	-	972
Short Windsor	-	-	-	3	3	3	-	-	972
Junior Windsor	-	-	-	-	3	3	3	-	972
York	6	4	2	-	-	-	-	-	1296

* Some competitions (such as BUSA outdoor) use an Albion/Windsor round, which means the ladies shot a Windsor while the gents shoot an Albion.

** These rounds are no longer acknowledged by GNAS as recognised UK rounds.

Metric Rounds

Metric outdoor rounds are shot on either a 122cm or 80cm standard face, using 10 zone scoring (as for the indoor rounds). Like the Imperial rounds, 3 arrows are shot per end, and the furthest distance is shot first. Metric rounds have much more boring names than Imperial rounds.



Rounds shooting 3 dozen arrows at each distance:

Round	Distances at		Max Score
	122cm face	80cm face	
FITA (Gents)	90m, 70m	50m, 30m	1440
FITA (Ladies)	70m, 60m	50m, 30m	1440
FITA Standard Bow	50m, 30m	-	720
Metric I	70m, 60m	50m, 30m	1440
Metric II	60m, 50m	40m, 30m	1440
Metric III	50m, 40m	30m, 20m	1440
Metric IV	40m, 30m	20m, 10m	1440
Metric V	20m, 15m	15m, 10m	1440
Long Metric (Gents)	90m, 70m	-	720
Long Metric (Ladies)	70m, 60m	-	720
Long Metric I	70m, 60m	-	720
Long Metric II	60m, 50m	-	720
Long Metric III	50m, 40m	-	720
Long Metric IV	40m, 30m	-	720
Long Metric V	20m, 15m	-	720
Short Metric	-	50m, 30m	720
Short Metric I	-	50m, 30m	720
Short Metric II	-	40m, 30m	720
Short Metric III	-	30m, 20m	720
Short Metric IV	-	20m, 10m	720
Short Metric V	-	15m, 10m	720
Frostbite	-	30m	360

Rounds shooting 1.5 dozen arrows at each distance:

Round	Distances at		Max Score
	122cm face	80cm face	

Half FITA (Gents)	90m, 70m	50m, 30m	720
Half FITA (Ladies)	70m, 60m	50m, 30m	720
Half Metric I	70m, 60m	50m, 30m	720
Half Metric II	60m, 50m	40m, 30m	720
Half Metric III	50m, 40m	30m, 20m	720
Half Metric IV	40m, 30m	20m, 10m	720
Half Metric V	20m, 15m	15m, 10m	720

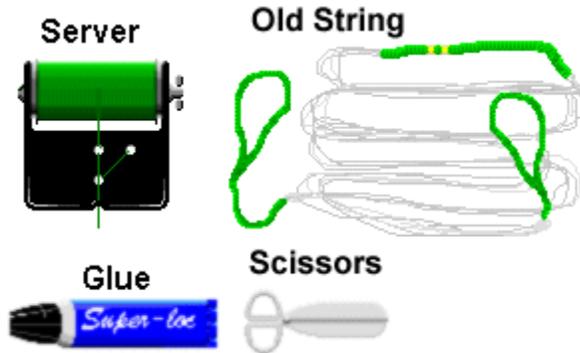
Other Metric rounds, all shot on a 122cm face:

Round	Dozens at Distances	Max Score
FITA 70	6 dozen @ 70m	720
FITA 900	2.5 doz. @ 60m, 2.5 doz. @ 50m, 2.5 doz. @ 40m	900

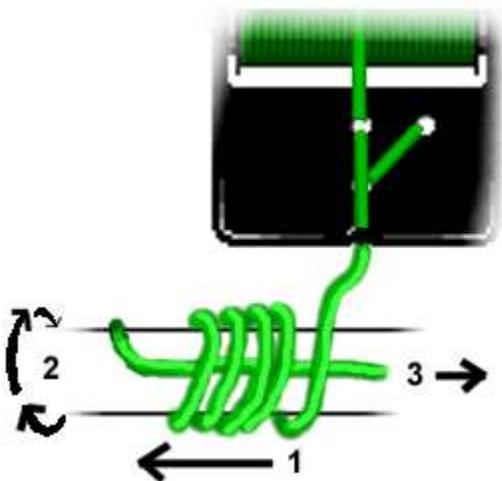
How to Make Stuff

How to Serve

For this exercise you will need:

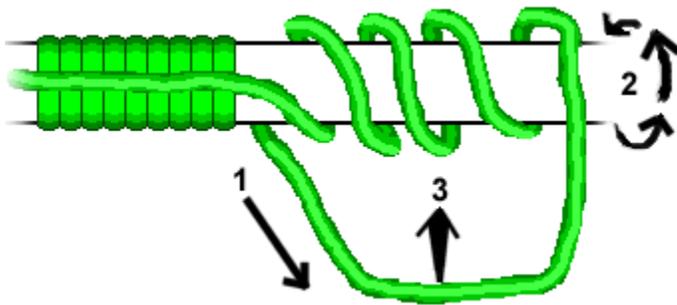


In archery the string is not just the white (or sometimes black) dacron, kevlar or fastflite strands that runs from one tip of the bow to the other, it is also the nylon twine that forms the loops at both ends and the finger rest in the middle of the string on which the nocking point is placed. In order to avoid confusion about which string is being talked about, the kevlar/fastflite/dacron string will be referred to as the bow string whereas the nylon string that forms the loops and finger rest will be called the serving. This part of the documentation is all about how to correctly put the serving onto the bow string and can be considered as the fundamental stage in learning how to make a bow string.



Start off by pulling about 2 inches of the serving from the server and place two inches along the old bow string in the opposite direction to which you wish to serve (1). Then hand wrap the server around the bow string five or six times in the direction you wish the serving to go (2) before finally pulling the loose end which will tighten the hand strung serving (3). Cut off the loose end and place a small dab of glue over the area where the loose end was.

Now by using the server continue wrapping the serving around the bow string. Make sure the serving is not too tight nor too loose (if the bow string twists then the serving is too tight and if you hold the serving from the server and the server falls then the serving is too loose (are you as confused as me!?!)). When you are confident with your serving technique you can now end the serving.



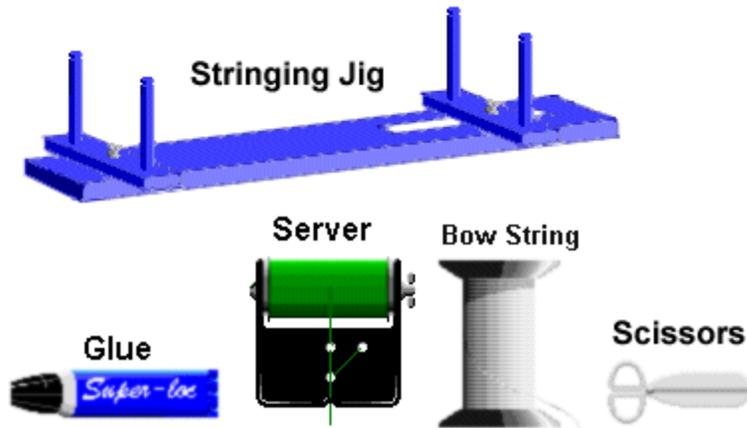
This is achieved by pulling about 9 inches of serving loose from the server and, keeping all the serving you have already done tight, cutting the serving from the server. Starting about 2 inches from where the already served serving ends and leaving a large drop of serving (1), wind the loose end around the bow string back towards the already strung serving (2) going in the same clockwise or anticlockwise direction. When you have wound the serving 5 or 6 times, hold the loose end firm and by turning the drooping serving (3) around the bow string you will continue winding up the serving whilst unwinding the far end. When all the winding is done, pull the loose end of the serving to tighten the string, cut off the excess and then put a dab of glue over the spot where the loose end was.

Do this exercise two or three times until you are confident with the techniques. Once you have learnt how to do this properly, you can now start to make some strings.

I apologise for the fact that every other word of the above section was either server, serving, or served!

Making a String

For this exercise you will need:

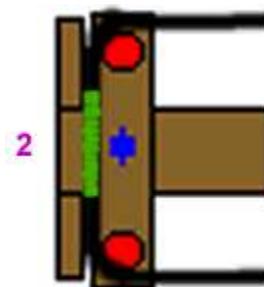


The first thing you need to do is work out the length you need to have your string and how many strands you need. If you have an old string that is the right length, all you need to do is set the stringing jig to the length of your old string. If you do not have an old string and are lucky enough, the stringing jig may have markings on it that indicate string lengths for your bow. If you are unfortunate enough not to have an old string or a stringing jig with markings on, then you may need to make one string which, if it is too long or short when strung to the bow, you use as a rough guide to making the next string. NOTE: A string that is too long or too short can damage your bow. THROW IT AWAY and do another one.

Once you have found out the length of your string, you need to know how many strands are needed to make up the string. This depends on what type of bow string you are using.



First of all set up the stringing jig so that it is the correct size for your string. Then you need to wrap the bow string around the jig (as shown in picture 1) half as many times as you need strands. i.e. if you need a 16 strand string, then make 8 circuits of the stringing jig. You should start and finish in between two pegs at one end of the jig.



Once you have done this you need to serve some serving in between both pegs (about five inches or 12cm) as in picture 2. You may want to increase one serving length by about an extra inch if you let the bowstring slide over the limb when destringing a bow. You should cover the start and end of the bowstring.



Adjust the jig and string as shown in picture 3 (or any other way that makes the following sections easy to do).



Leaving a gap of about half an inch from both pegs (or half an inch from one peg and one inch from the other if you let the bowstring slide over the limb when destringing) join the string together by serving about 3 inches along the string at both ends.

Remove the bowstring from the jig and give it a few twists.

You now need to string your new bowstring to the bow and check the bracing height (found in some archery catalogs, or Gary's head, or somewhere like that). If the bracing height is too long then your string is too short. Use it to help when making your next attempt, and then throw it away. If it is too long by no more than an inch you can remove the string and twist it a few times (in the same direction you twisted it a second ago) and replace it to see if it is the correct length. If it is too long by more than an inch then throw the string away and make a new one.

Once you have a string which is the correct length you can serve about 4 inches of serving along the part of the bowstring that the nocking point is to be attached to.

Congratulations! Now you're done! Go and shoot something!

The History of Archery

Overview

206BC - 220AD	Archaeological evidence of bows in China
500AD	Historical evidence of bows in China
8th Century AD	Remains of longbow found in Lupfen
9th Century AD	Remains of longbow found in Ireland
950 AD	Historical evidence of crossbows in France
1066 AD	Battle of Hastings (Harold shot in eye?)
1340 AD	Start of The One Hundred Years War
1346 AD	Crécy
1356 AD	Poitiers
1414 AD	Agincourt
1453 AD	End of The One Hundred Years War
1644 AD	Tipper Muir - Last English bow war
17th Century AD	Muskets become more popular
c. 1953 AD	SUAC founded

General

The origins of the bow and arrow are not generally known, however this weapon was developed and used in every continent except Australia where the spear and spear thrower may have been a better weapon against the local fauna.

Shortbows

Only three foot long and drawn to the chest, the short bow was not a very effective fighting weapon. Indeed the shortbow as used by the Anglo Saxons was never regarded as a powerful weapon of war and most battles were fought without them, although it is recorded that King Harold used them in the Battle of Hastings. The ineffectiveness of the short bow can be demonstrated by the Crusades where the Turkish horseback archers were able to transform the Crusaders into pincushions yet inflicted little damage to them due to the thickness of the Crusaders armour. Against unarmoured people they can be used to some effect, but such battles were rare and the extent of short bows in English history is very small.

We know that the Vikings made use of the bow quite extensively both on land and at sea,

especially the Norwegians (recorded as 'Famous bowmen') and the Swedes (the word 'bow' sometimes being used to denote a warrior in Sweden). Even kings were known to wield bows in battle, taking great pride in their skill, and this is shown well in the telling of the Battle of Svoldr in 'King Olaf Tryggvasson's Saga'. It seems reasonable to expect that when the Vikings settled in Britain they would have brought their bows with them and that skill in archery would still be prized amongst them. As to how much the Saxons used archery we cannot be so sure. Certainly they knew of, and used, bows both as weapons of war and for hunting. However, whether they were used by the upper ranks of society or just by ceorls is a more difficult question. It seems most likely that amongst the Saxons the bow was used mainly for hunting by the high born although it was sometimes used in battle by the ceorlish ranks. However amongst the Vikings archery was quite widely used by both high and low.

The evidence for the use of the bow in Normandy before 1066 is even slighter than that for England, though our knowledge of the Battle of Hastings clearly suggests a strong likelihood that military archery in Normandy was by that time well developed. This is made even more likely when you remember that the Normans were descended from the Vikings who we know had a good tradition of archery.

Crossbows

Archaeological evidence dating from the Han Dynasty (206BC - 220AD) as well as historical evidence from the 6th century show that the Chinese were probably the nation who invented the crossbow. From its' discovery it gradually filtered west throughout Europe, eventually being used by the Romans both in a single wood and composite design (a design that subsequently dissapeared and reappeared in the 12th century) as well as in the form of a large siege crossbow called an aroabalista. However from this time onwards, information on crossbows is scarce and it is not until the 10th century that we read of crossbows again. These references appear in French texts that date from 950 AD but crossbows appear to come into general use only after the late 11th century. In England they appear after the battle of Hastings of 1066 where they were used against the inferior Saxon short bow that had a firing range of about 200 meters compared to the crossbows 300. Compared to the Saxon short bow, the crossbow is not only more powerful but also more accurate which greatly compensates for its' slower firing rate. Therefore it is no surprise that the crossbow became the favourite long range weapon of the English kings up till the 13th century when it was abandoned in favour of the Welsh longbow. The two main types of crossbow mentioned in English texts are the one and two foot crossbows (based on whether one or both feet were used to pull back the string).

The crossbow was seen as such a terrible weapon that the Lateran council of 1139 ruled that people using crossbows against Christians or Catholics where to be excommunicated. However this was largely ignored and by the end of the 12th century, large groups of mounted crossbowmen were among the most effective and fearful instruments of war. However despite the eagerness of most kings to use crossbowmen and despite the wage of a crossbowman being twice that of normal footsoldiers in France, they were treated as common criminals if ever captured in battle. In fact during the Baronial revolt, when one baronial garrison surrendered to King John, he was willing to ransom all men-at-arms except crossbowmen whom he ordered to

be hung for killing so many knights.

As effective as the crossbow was in attack, so to it could be used in defence and it is the case that from the 12th century that we start finding arrow slits being built into castle walls. However the crossbows were just as accurate as they were deadly and so too do we see shutters and bretaches being built on top of the walls to protect the defenders. Indeed it can be said that the crossbow is one of the prime factors in changing the design of the castle from the 12th century onwards.

The mechanism of the crossbow was based on a simple trigger that held in place a small wheel that held the string. However despite the seemingly simplicity of the construction of the bow, in England a good crossbow maker could be found in almost every castle possibly earning as much 5d (pence) a day or 5 times the average wage at this time. These castles and garrisons would also have been stocked with a band of crossbowmen numbering about 6 in peaceful times who would have earned a similar wage to the crossbow maker.

Even after the 13th century the crossbow was used in England to some extent with Edward I and Edward III using them in battle and Elizabeth I and James I were renowned shots. Henry V even had 38 crossbowmen at Agincourt although historians rightly confer the battle victory to the longbow. However it is as a hunting weapon that the crossbow is used during the 13th century and onwards, technology being able to produce a compact design that was popular with horseback riders. The design of the crossbow did not change much until the 16th century when it became used more frequently for sport, England, France and Spain using slender stocked bows whilst Germany and central Europe preferred short stocks and broad butts.

By the 17th century, muskets were being perfected and so both in England and now in the continent, the crossbow diminished as hunting weapon and by the 18th century its use was confined to sport.

Longbows

The use of the word longbow is perhaps a little misplaced as our use of the word was in fact never used until the end of the middle ages. Indeed there is no real magic height at which a shortbow becomes a long bow although it is generally accepted that a long bow is around 5ft 10" to 6ft in length. Indeed a lot of what people believe to be fact about the longbow does in reality turn out to be myth.

Although attributed to the Welsh, longbows have been around at least since the Roman era where 36 bows ranging in length from 5ft 7" to 6ft have been found. Bows from Lupfen that date to the 8th century AD and from Ireland that date from the 9th have been found that are also of longbow length. In England, historical evidence indicates that the longbows that were used in in the 11th century AD may in fact only have been 5ft long, gradually increasing in length to 6ft only by the 15th century.

Despite perhaps not being the originators of the longbow, there is possible evidence of a Welsh longbow eleven years before Hastings in the account of Ralph, Eorl of Hereford, on the

expedition he led into Wales. When the Saxon horsemen had ridden into the Welsh mountains they were ambushed by archers who shot so accurately and strongly that, according to the Abington Chronicle, 'the English people fled, before ever a spear had been thrown, because they were on horseback'. One estimate from the time puts the English casualties at five hundred whilst the Welsh suffered no losses. Here was a lesson that, if the Saxons had learned from it, could have changed the outcome of the Battle of Hastings; cavalry are helpless against well ordered archers.

Perhaps the only real truth there is about the longbow is that it was predominantly used by English and Welsh forces until the later part of the middle ages when other nations began to use the tactics developed by the English during the Hundred Years War.

Henry I (1100-1135) passed a law that absolved any archer if he killed a man whilst practising archery.

Although it is Edward I that is commonly regarded as the man who brought the longbow into English warfare, actual evidence for this is quite scant and it is during Edward III's reign where we find a considerable amount of information indicating on the prominence of the longbow in the English armoury.

Edward III's reign was dominated by the Hundred Years War that actually lasted from 1337-1453 and it is perhaps because of the continual wars waged during this time that not only do we have so many historical records on the longbow but may also have been the reason that the longbow became such a legend that it is today. Ironically despite the English reputation for producing the best longbow archers in the world, there were instances when it was hard to find any suitable archers at all. Indeed in 1363 Edward III ordered his Sheriffs to enforce archery practices indicating that proficient archers were not available. However despite these odd occurrences it was often the case that the archery skills of the longbowmen were highly valued, for example the instance in 1365 when archers were forbidden to leave England without a royal licence.

The Hundred Years War

Political insults between Edward III and Philip VI (the first of the Valois Kings) finally erupted in the first major battle taking place at sea off Sluis in June 1340 with 147 English ships (of which two-thirds were archers) against 190 French. Despite being at sea, this battle was fought in a similar way to how a land battle was fought, the English having their men-at-arms in the centre boats with the archers (both crossbow and longbow) flanking them either side. The French chained all but 24 of their boats together yet this tactic was to be of no avail. Despite the French having a reputed 20,000 Genoese crossbowmen (out of a total of 35,000 men) the English won a resounding victory, capturing and executing both the French admirals. In fact it was said that so many French went overboard that if the fish could speak, they would have learnt French.

Crécy

After landing with 12,000 men (of which 7,000 were archers) and taking Caern in Normandy where 105 Normans were painfully killed for exposing their backsides to the English archers, Edward III moved north, continually tracked by the larger French army, until he arrived at Crécy in 1346 and now possibly with 8000 men.

The English took a defensive position in three divisions on ground that sloped down with the archers on the flanks. The French sent out the Genoese archers (perhaps numbering 6000 out of 12,000 men) to start but perhaps due to the rain affecting their bowstrings, as some sources have indicated, the crossbows were ineffective and were cut down by the English archers who kept their strings dry. Philip VI, after commenting on the uselessness of his archers, sent forward his calvary who rode through and over his own crossbowmen. However the archers and men-at-arms held them off not just for this attempt, but for 15 times in total. According to one Geoffrey le Baker, 4000 French knights were killed and no one bothered to count the rest. Edward III lost very few men and victoriously rode to Calais.

After this battle a few small wars were fought, however by now the French had realised the effectiveness of the longbow and before one battle Charles de Blois, the French Kings Nephew, ordered anything that may be used as defence for the English Archers to be torn down. However even this was not enough and with the help of a friendly garison, Charles was defeated.

An indication of the low rank of the archer is given where during another battle where the English were outnumbered, 30 archers deserted the ranks. After the battle in which the English won, all 30 where beheaded, a fate that was rarely bestowed on other soldiers.

Poitiers

Information about this battle is in fact quite scarce and varied, but the most likely version of events follows. In 1356 the English (numbering an estimated 7000 armoured horse, 3000 longbow and 100 light troops), led at this time by Edward IV (Edward III's son also called the Black Prince), were possibly retreating after a long campaign in France with the French army close behind. The only thing stopping an actual battle was a large hedge that seperated the two armies. However the French (with about 20,000 to an unfounded 60,000 men) found a large gap and tried to break through, bringing them onto the rear of the English. The Black Prince, realising battle was to commence, had by now ordered his men to form the usual battle position of archers on the flanks as well as sending some troops to occupy a nearby hill.

The French, who had developed a small cavalry unit to specifically attack the English archers, were once again stoped by the archers and men-at-arms by the gap in the hedge and in fact were routed. The next attack came from the Germans who had allied with the French and were leading the second cavalry. However this too was stoped and indeed so strong was the attack by the English archers that at one point some ran out of arrows and had to run forward and collect arrows embedded in people lying on the ground. Doing so they encountered the French men-at-arms and melee broke out. At this time the Captal de Buch, a Gascon ally of the English, led a reserve force to attack the French from the rear. Also at the same time, under a volley of his archers' fire, the Black Prince ordered the advance. The French broke and were persude to Poitiers where the French King was captured and held to ransom in the Tower of London for

3,000,000 gold crowns.

Perhaps a notable event during the start of the battle was the Black Prince's speech in which he praised the courage and skill of the archers, perhaps marking the turn of respect for the archer for it is only a few decades later in 1377 that the first poems of Robyn Hode by Piers Plowman start to appear.

In 1356, after Poitiers, the French organised their own longbow corps but they became so expert that it was worried they might become too powerful and were so disbanded.

In 1363 all men were ordered to practice archery on Sunday and holidays, hence the appearance of target ranges beside churches. However no man was allowed to shoot at a known distance and no man over the age of 24 was allowed to shoot at any mark under the range of 11 score yds, indicating that even in England it was acknowledged that making an archer too good could be dangerous. This was reaffirmed in 1512 and 1633.

Agincourt

The battle of Agincourt that occurred in 1414 was born out of an attempt to revive the English fortunes in France. Some say that Henry V, the king of England at this time, was pushed into battle by the French insults whilst others refer to his youth and persistent subjects. In any case Agincourt was not the battle Henry V had intended. He set about reviving the Royal Navy that had almost disappeared in the 14th century as well as placing great emphasis on raising bows and in a few years had a navy and army of considerable strength.

After landing a few miles west of Harfleur and capturing it after a five week siege, he marched to Calais despite advice not to do so. Finding all his routes blocked by the French army he finally rested in Maisoncelles with the villages of Tramecourt and Agincourt as well as the French army ahead of him. Realising he would have to fight he moved on and was eventually blocked by the French army, led by the Constable d'Albret, at Agincourt.

Henry V, who by now only had about 6000 men (mostly archers) out of an original force of 8000, positioned three ranks of men-at-arms in the centre with himself leading the centre rank and had the archers in their usual position on the flanks. The French with up to 60,000 men were divided into three divisions, two of them unmounted and the third mounted. The wings were of cavalry intended to smash the English archers whilst behind them were the Genoese crossbowmen (of with 4,000 were said to have been sent away due to the cramped nature of the French army).

After a time of stalemate with both armies about a mile apart, Henry V ordered the advance, with archers hidden in a nearby forest giving covering fire, until the archers were in shooting range. Then he ordered his men to set down the defensive stakes and to open fire. The French cavalry began the counter attack but perhaps due to the English attack depleting the ranks or perhaps due to some deserting, they advanced with fewer men than expected. The attack was made but did little and according to one source the French men-at-arms deserted. By this time the second division was advancing with the cavalry running into the retreating first division. Despite this

disruption the French van advanced. They managed to make one impact on the English line causing it to retreat, but not break which was fortunate as the English had no reserves. Indeed the English then made a counter attack and the English archers, no longer being effective now that melee had broken out, drew their weapons and, in what has been called the central part of the battle, attacked. With the French men-at-arms so crowded that they could not raise their weapons and with the French calvary blocked by the men-at-arms in front, the bodies began to pile up under the French retreat. Between 6,000 and 10,000 French were killed whilst the English suffered losses that were under 200.

This was not the last battle to be fought with longbows for from 1429 Jean d'Arc led the French to regain the land that the English had captured. However the last battle of the 100 years war was fought at Castillon in 1453 and as a sign of things to come, the English archers in a desperate (and some say tactically wrong) attack on a French artillery position were killed by cannon and lances. Finally muskets and guns were coming into force.

In 1472, due to the amount of wood needed for bows not being available, it was ordered that all ships importing from places where staves were made, had to import 4 staves for every tun of cargo.

In 1508 crossbows were forbidden in England in an attempt to increase the use of the longbow but this was repealed in 1536.

The last battle with English archers occurred in 1644 at Tipper Muir.

Main source of information: Bradbury, J. "The Medieval Archer" The Boydell Press 1985.

Composite Bows

Today, use of the longbow is rare and use of a shortbow even rarer, however the composite (or recurve) bow still reigns supreme when it comes to archery despite stiff competition from the compound. Although today's bow is created using the latest technology, its originator can be found way back many millenia ago.

[Top »](#)

Compound Bows

Coming soon! (maybe)

Sources

- Longbow. A Social and Military History. (1997). Robert Hardy. (ISBN 1-85260-412-3)
- Bradbury, J. "The Medieval Archer" The Boydell Press (1985).